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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,675	02/06/2002	Charles E. Romano JR.	83161LMB	8799

7590 12/22/2003

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EXAMINER	
SHEWAREGED, BETELHEM	
ART UNIT	**PAPER NUMBER**
1774	

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,675	ROMANO ET AL.	
	Examiner	Art Unit	
	Betelhem - Shewareged	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *18-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-17* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicant's response along with the declaration under Rule 132 filed on 10/06/2003 has been fully considered. All prior art rejections have been withdrawn in view of Applicant's comments.

2. Claims 1-27 are pending. (NOTE: Claims 18-27 are still withdrawn from consideration as non-elected claims).

Election/Restrictions

3. Applicant's election with traverse of Group I claims 1-17 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that searching of the two distinct Groups would not prove serious burdensome to the Examiner. This is not found persuasive because Group I is classified in class 428 and Group II is classified in class 347, and searching in two different classes for two distinct inventions brings a serious burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3 and 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 6,214,458 B1) in view of Poerschke et al. (DE. 197 21 238 A1) as evidenced by Aono et al. (US 4,946,741), Burns et al. (US 6,089,704), and Peternell et al. (US 6,420,016 B1).

Kobayashi discloses an image recording sheet for ink jet printing comprising a support film, an image receiving layer provided on one side of the support and a white coated layer provided on the other side of the support (abstract). A subbing layer containing gelatin is provided between the support film and the image receiving layer (col. 4, line 16). The subbing layer is equivalent to the claimed hydrophilic absorbing layer, and the image receiving layer is equivalent to the claimed hydrophilic overcoat polymer layer. The image receiving layer comprises a water soluble resin and inorganic particles and/or organic particles (col. 4, line 47). Methyl cellulose is an example of the water soluble resin (col. 4, line 56), and the organic particle can be a polymer latex (col. 5, line 30). The ratio of resin to latex is 9:1 to 5:5 (col. 15, line 33), wherein this value is equivalent to the claimed value. The image receiving layer has a thickness ranging from 1 to 50 um (col. 16, line 58), wherein the thickness overlaps with the claimed range. The image receiving layer further comprises a mordant to fix dyes (col. 16, line 39). With respect to claim 12, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the thickness of the subbing layer in order to optimize the ink-absorbing properties of the layer. A prima facie case of obviousness

may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney,* 205 USPQ 215.

Kobayashi fails to disclose the use of modified gelatin in the subbing layer as claimed.

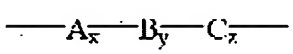
Poerschke discloses an ink jet recording medium comprising an ink receiving layer containing modified gelatin (claim 1). The source of the gelatin is bone or skin (page 2, last paragraph). Furthermore, the use of pigskin gelatin in order to fix ink liquid is well known in the art (see col. 4, line 3 and col. 3, line 17 of Peternell). The gelatin is modified with alkylene succinic acid. Dodecenylsuccinic acid is a preferred example. See page 3, 3rd full paragraph. With respect to claim 14, during modification of the gelatin, not all gelatin are being modified, at least 10% remain as the starting material i.e., unmodified gelatin, which is evidenced by Aono. See col. 3, lines 43-49 of Aono.

Kobayashi and Poerschke are analogous art because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the modified gelatin of Poerschke with the subbing layer of Kobayashi in order to reduce tackyness of coating, to reduce drying time, to reduce bleeding and to provide an easy, reproducible, and low-cost production (page 2, 1st full paragraph).

Kobayashi does not disclose the components of the polymer latex as recited in claim 3.

Burns teaches an ink jet recording element comprising a support, a hydrophilic image recording layer (equivalent to the claimed hydrophilic absorbing layer) on the

support, and an overcoat layer comprising a vinyl latex polymer (equivalent to the claimed hydrophilic overcoat polymer layer) on the hydrophilic image recording layer. The latex polymer has the following formula:



wherein:

A is a monomer such as hydroxyethylacrylate, hydroxyethylmethacrylate, acrylic acid, methacrylic acid, acrylic acid, vinyl alcohol, acrylamide or methacrylamide;

B is a monomer such as methylacrylate, methylmethacyrlate, butylacrylate, butylmethacrylate, ethylacrylate, ethylmethacrylate, isopropylacrylate, cyclohexylacrylate, norbornylacrylate, vinylacetate or vinylneodeconate;

C is a monomer such as trimethylammonium ethylacrylate chloride, trimethylammonium ethylacrylate methylsulfate, trimethylammonium methylacrylate chloride or trimethylammonium ethylmethacrylate methylsulfate;

x is from about 10 to about 80 mole %;

y is from about 10 to about 80 mole %; and

z is from about 2 to about 20 mole %.

Kobayashi and Burns are analogous art because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the polymer latex of Burns with the invention of Kobayashi so as to provide an ink jet recording element

which has a high gloss and fast drying time without having a high viscosity (col. 2, lines 9-11).

6. Claims 1-3 and 5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. (US 5,478,631) in view of Poerschke et al. (DE. 197 21 238 A1) as evidenced by Aono et al. (US 4,946,741), Burns et al. (US 6,089,704), and Peternell et al. (US 6,420,016 B1).

Kawano discloses an ink jet recording element having a support and a top and bottom hydrophilic absorbing layers on the support (col. 7, lines 3-21). The bottom layer is equivalent to the claimed hydrophilic absorbing layer and top layer is equivalent to the claimed hydrophilic overcoat polymer layer. Both top and bottom layers are formed from an aqueous composition including one or more water soluble high polymers such as methyl cellulose and gelatin, and further including binders such as polyurethane and vinyl latex (col. 6, lines 1-48). The bottom layer may be further divided to form an intermediate layer and a lowest layer (col. 7, line 52-55). The intermediate layer is equivalent to the claimed inner layer. The ink receptive layer contains a dye-fixing agent, i.e. mordant (col. 6, lines 48-61). With respect to claims 6, 12 and 13, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the thicknesses of the layers in order to optimize surface strength, bleeding, thinning, water resistance and ink absorption of the layers. A prima facie case

of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney,* 205 USPQ 215.

With respect to claim 16, since Kawano discloses that binders may be used "as far as the effects of the present invention are not lost," it would have been obvious to one of ordinary skill in the art use less of the binders than that of the water soluble high polymer, as required component in each layer (see col. 6, lines 33-36). Consequently, the ratio of methyl cellulose to vinyl latex instantly claimed would have been obvious to one of ordinary skill in the art.

Kawano fails to disclose the use of modified gelatin in the bottom layer as claimed.

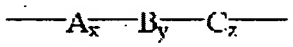
Poerschke discloses an ink jet recording medium comprising an ink receiving layer containing modified gelatin (claim 1). The source of the gelatin is bone or skin (page 2, last paragraph). Furthermore, the use of pigskin gelatin in order to fix ink liquid is well known in the art (see col. 4, line 3 and col. 3, line 17 of Peternell). The gelatin is modified with alkylene succinic acid. Dodecenylsuccinic acid is a preferred example. See page 3, 3rd full paragraph. With respect to claim 14, during modification of the gelatin, not all gelatin are being modified, at least 10% remain as the starting material i.e., unmodified gelatin, which is evidenced by Aono. See col. 3, lines 43-49 of Aono.

Kawano and Poerschke are analogous art because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the modified

gelatin of Poerschke with the bottom layer of Kawano in order to reduce tackyness of coating, to reduce drying time, to reduce bleeding and to provide an easy, reproducible, and low-cost production (page 2, 1st full paragraph).

Kawano does not disclose the components of the polymer latex as recited in claim 3.

Burns teaches an ink jet recording element comprising a support, a hydrophilic image recording layer (equivalent to the claimed hydrophilic absorbing layer) on the support, and an overcoat layer comprising a vinyl latex polymer (equivalent to the claimed hydrophilic overcoat polymer layer) on the hydrophilic image recording layer. The latex polymer has the following formula:



wherein:

A is a monomer such as hydroxyethylacrylate, hydroxyethylmethacrylate, acrylic acid, methacrylic acid, acrylic acid, vinyl alcohol, acrylamide or methacrylamide;

B is a monomer such as methylacrylate, methylmethacyrlate, butylacrylate, butylmethacrylate, ethylacrylate, ethylmethacrylate, isopropylacrylate, cyclohexylacrylate, norbornylacrylate, vinylacetate or vinylneodeconate;

C is a monomer such as trimethylammonium ethylacrylate chloride, trimethylammonium ethylacrylate methylsulfate, trimethylammonium methylacrylate chloride or trimethylammonium ethylmethacrylate methylsulfate;

x is from about 10 to about 80 mole %;

y is from about 10 to about 80 mole %; and

z is from about 2 to about 20 mole %.

Kawano and Burns are analogous art because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the polymer latex of Burns with the invention of Kawano so as to provide an ink jet recording element which has a high gloss and fast drying time without having a high viscosity (col. 2, lines 9-11).

Allowable Subject Matter

7. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither Burns nor Kobayashi teach or even fairly suggest a latex polymer as recited in claim 4.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 703-305-0389. The examiner can normally be reached on Mon.-Thur. 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H Kelly can be reached on 703-308-0449. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Betelhem Shewareged
December 13, 2003.